

WHAT IS CLAIMED IS:

1. An ink package comprising:

an ink bag including a pair of flexible walls which are opposed to each other and accommodating ink; and

an ink delivering portion having a passage through which an interior space and an exterior space of said ink bag are held in communication for delivering said ink in said ink bag to said exterior space,

wherein said ink delivering portion includes a fixing portion which is fixed to one of opposite ends of said ink bag, and an extending portion which is formed adjacent to said fixing portion so as to extend therefrom into said interior space of said ink bag, said extending portion having a cross sectional area which gradually decreases in a first direction from said one of the opposite ends of said ink bag toward the other end thereof.

2. The ink package according to claim 1, wherein said extending portion has a thickness which gradually decreases in said first direction.

3. The ink package according to claim 1, wherein each of said fixing portion and said extending portion has a cross sectional area that gradually decreases in opposite second directions which are perpendicular to said first direction and a third direction in which said pair of walls are opposed to each other.

4. The ink package according to claim 1, wherein said pair of flexible walls are constituted by a pair of flexible sheets which are opposed to each other and which are connected to each other at peripheral edges thereof, said extending portion being symmetrical with respect to a plane including a connected surface at which said pair of flexible sheets are connected.

5. The ink package according to claim 4, wherein said extending portion has, at one of opposite ends thereof at which said extending portion is adjacent to said fixing portion, a second dimension as measured in a second direction perpendicular to said first direction and a third direction in which said pair of flexible sheets are opposed to each other, said second dimension being larger than a first dimension thereof as measured in said first direction.

6. The ink package according to claim 5, wherein said second dimension of said extending portion is larger than a third dimension thereof as measured in said third direction.

7. The ink package according to claim 1, wherein said passage extends through said fixing portion and said extending portion, said passage having a cross sectional area in said fixing portion larger than that in said extending portion.

8. The ink package according to claim 1, wherein said

ink bag has, in a state in which the amount of ink in said ink bag is reduced to a predetermined minimum value after the ink has been used under an ordinary recommended condition, a non-contact portion in which said walls do not contact each other and in which the ink remains unless said ink delivering portion has extending portion, said extending portion having a configuration which substantially corresponding to that of said non-contact portion.

9. The ink package according to claim 1, wherein said passage comprises at least two passages which extend through said fixing portion and said extending portion, said ink package further comprising a hollow insulating member which extends from said extending portion toward said interior space of said ink bag and which communicates with one of said at least two passages.

10. The ink package according to claim 9, wherein said hollow insulating member has an inside diameter smaller than that of said one of said at least two passages communicating with said hollow insulating member.

11. The ink package according to claim 9, wherein said hollow insulating member is formed integrally with said extending portion.

12. The ink package according to claim 9, wherein said

ink delivering portion includes electrode supporting portions each of which closes one of opposite open ends of a corresponding one of said at least two passages on the side remote from said ink bag, said electrode supporting portions being provided for supporting a pair of electrodes.

13. The ink package according to claim 12, wherein one of said pair of electrodes is a hollow ink-extracting needle for extracting the ink in said ink bag.

14. The ink package according to claim 9, wherein said at least two passages are aligned with each other on a plane perpendicular to a direction in which said pair of flexible walls are opposed, said at least two passages being offset from a mid point of a dimension of said ink bag as measured on said plane in a direction perpendicular to said first direction.

15. An ink detecting apparatus which detects ink in an ink package that includes an ink bag accommodating ink and an ink delivering portion through which the ink in said ink bag is delivered from said ink bag, said ink detecting apparatus comprising:

a pair of electrodes provided to be held at one of opposite ends of said ink bag to electrically conduct with the ink in said ink bag;

a hollow insulating member provided for one of said pair of electrodes to extend in a direction from said one of opposite ends

of said ink bag toward the other end thereof, the ink in said ink bag reaching said one of said pair of electrodes through said hollow insulating member; and

an electric characteristics detecting device which detects electric characteristics between said pair of electrodes.

16. The ink detecting apparatus according to claim 15, wherein said ink delivering portion includes at least one passage formed so as to extend therethrough, the other of said pair of electrodes being located within said at least one passage.

17. The ink detecting apparatus according to claim 15, wherein said ink package is removably mounted on a mounting portion, and said pair of electrodes are attached to at least one of said ink package and said mounting portion and extend toward said ink bag in a state in which said ink package is mounted on said mounting portion.

18. The ink detecting apparatus according to claim 15, wherein said ink bag includes a pair of walls which are opposed to each other and which are flexible in a direction in which said pair of walls contact each other with a decrease in an amount of the ink in said ink bag, said ink bag having a contact portion in which said walls contact each other in a state in which the amount of ink in said ink bag is reduced to a predetermined minimum value after the ink has been used under an ordinary recommended condition, and a non-contact portion in which said

walls do not contact in said state and in which the ink remains, said hollow insulating member extending in said direction from said one of opposite ends of said ink bag toward the other end thereof beyond a boundary between said contact portion and said non-contact portion.

19. The ink detecting apparatus according to claim 15, wherein one of said pair of electrodes is a hollow ink-extracting needle for extracting the ink from the ink bag.

20. The ink detecting apparatus according to claim 17, wherein at least one of said pair of electrodes is attached to said ink package.

21. The ink detecting apparatus according to claim 17, wherein at least one of said pair of electrodes is attached to said mounting portion.

22. The ink detecting apparatus according to claim 15, wherein said hollow insulating member is formed integrally with said ink delivering portion.

23. The ink detecting apparatus according to claim 15, wherein said ink delivering portion includes at least one passage formed so as extend therethrough, and an electrode supporting portion which closes one of opposite open ends of said at least one passage on the side remote from said ink bag, and is provided for

supporting one of said pair of electrodes, said hollow insulating member communicating with said at least one passage.

24. The ink detecting apparatus according to claim 23, wherein said hollow insulating member has an inside diameter smaller than that of said at least one passage communicating with said hollow insulating member.

25. The ink detecting apparatus according to claim 15, wherein said ink delivering portion includes at least two passages formed so as to extend therethrough, at least two of said at least two passages having electrode supporting portions each of which closes one of opposite ends of a corresponding one of said at least two of said at least two passages on the side remote from said ink bag, and is provided for supporting each of said pair of electrodes, said hollow insulating member communicating with one of said at least two passages .

26. The ink detecting apparatus according to claim 25, wherein said hollow insulating member has an inside diameter smaller than that of said one of said at least two passages communicating with said hollow insulating member.

27. The ink detecting apparatus according to claim 15, wherein said ink delivering portion of said ink package includes a fixing portion which is fixed to one of opposite ends of said ink bag and an extending portion which is formed adjacent to said

fixing portion so as to extend therefrom into said ink bag, said extending portion having a cross sectional area which decreases in a direction from said one of opposite ends of said ink bag toward the other end thereof.

28. An ink package comprising:

an ink bag accommodating ink and including a pair of walls which are opposed to each other and which are flexible in a direction in which said pair of walls contact each other with a decrease in an amount of the ink in said ink bag;

an ink delivering portion which is provided at one of opposite ends of said walls and is provided for supporting a pair of electrodes such that said pair of electrodes electrically conduct with the ink in said ink bag; and

a hollow insulating member which extends in a direction from said one of opposite ends of said walls toward the other end thereof, and has a passage which communicates with one of said pair of electrodes and the ink within said ink bag at opposite ends thereof, respectively.

29. The ink package according to claim 28, wherein said ink delivering portion includes at least one passage which communicates with the other of said pair of electrodes and the ink within said ink bag at opposite ends thereof, respectively.

30. The ink package according to claim 28, wherein one of said pair of electrodes is a hollow ink-extracting needle for

extracting the ink from said ink bag.

31. The ink package according to claim 28, wherein said ink bag has a contact portion in which said walls contact each other in a state in which the amount of ink in said ink bag is reduced to a predetermined minimum value after the ink has been used under an ordinary recommended condition, and a non-contact portion in which said walls do not contact in said state and in which the ink remains, said hollow insulating member extending in said direction from said one of the opposite ends of said walls toward the other end beyond a boundary between said contact portion and said non-contact portion.

32. The ink package according to claim 28, wherein said hollow insulating member is formed integrally with said ink delivering portion.

33. The ink package according to claim 28, wherein said ink delivering portion includes at least one passage formed so as to extend therethrough, and an electrode supporting portion which closes one of opposite ends of said at least one passage on the side remote from said ink bag, and is provided for supporting one of said pair of electrodes, said hollow insulating member communicating with said at least one passage.

34. The ink package according to claim 33, wherein said hollow insulating member has an inside diameter smaller than

that of said at least one passage communicating with said hollow insulating member.

35. The ink package according to claim 28, wherein said ink delivering portion includes at least two passages, at least two of said at least two passages having electrode supporting portions each of which closes one of opposite ends of a corresponding one of said at least two of said at least two passages on the side remote from said ink bag, and is provided for supporting each of said pair of electrodes, said hollow insulating member communicating with one of said at least two passages.

36. The ink package according to claim 35, wherein said hollow insulating member has an inside diameter smaller than that of said one of said at least two passages communicating with said hollow insulating member.